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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/446,769	05/05/2000	KAZUE NAKAMURA	450118-4848	2863

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EXAMINER

CHANNAVAJJALA, SRIRAMA T

ART UNIT	PAPER NUMBER
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2177

DATE MAILED: 05/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/446,769

Applicant(s)

NAKAMURA, KAZUE

Examiner

Srirama Channavajjala

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Examiner acknowledges Applicant's response to office action filed on April 10 2002, paper no. # 9.
2. Claims 1-17 are pending in this application.
3. Examiner acknowledges "**preliminary amendment**", filed on 12/23/1999.

Drawings

4. The drawings filed on 5/5/2000 are approved by the Draftsperson under 37 CFR 1.84 or 1.152.

Information Disclosure Statement

5. The information disclosure statement filed on 9/19/2000, paper no. # 6 has been considered and a copy was enclosed with this office action, paper no. # 8.

Priority

6. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d), based on International Application No. **PCT/JP99/02243**, filed on 27 April 1999, **P10-117537** filed on 27 April 1998.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lam, US Patent No. 5564037 in view of Kamiyama, US Patent No. 5893139.
8. As to Claim 1 and 13, Lam details a system which including 'a data storage and retrieval apparatus having a data processor, including a memory, central processing unit' [col 4, line 14-18, line 24-29], Lam teaches for example file server element 10 is also known as primary storage device is coupled to the secondary storage device element 20 as detailed in fig 1, further fig 1 is considered to be client-server architecture [see col 4, line 24-25], a workstation or computer element 40 is a microprocessor based computer system, typically a central processing unit or CPU on a single chip is called microprocessor, 'first storage medium' [col 4, line 17, fig 1, element 10], examiner interpreting first storage medium corresponds to Lam's primary storage device as detailed in fig 1, element 10 or file server, 'performs migration for transferring a file stored in the first storage medium to a second storage medium' [col 4, line 29-34, 37-40, line 47-49], Lam teaches for example migration engine element 11 performs migration for transferring of files on a LAN system fig 1, more specifically NetWare operating

system versions 4.x is a Real time data migrator or RTDM feature is included as detailed in col 2, line 60-62, examiner interpreting second storage medium corresponds to Lam's second module or secondary storage device element 20 for example Optical storage device as detailed in fig 1, 'an information acquisition means for reading said access information from the information file stored in the first storage medium' [col 6, line 19-24], 'data processor accesses a migrated file' [col 6, line 22-24], Lam teaches identifying files for migration as detailed in col 6, line 13-15, also Lam specifically teaches for example command to migrate file(s), reading the file and sending or transmit file to secondary storage as detailed in fig 2, 'a file opening means for opening the transferred file in the second storage medium' [see fig 2, especially S1-S3], 'a reading means for reading the stored data from the opened file' [see fig 2, S2, col 6, line 21-23], 'storing it in a predetermined region on the memory of the data processor' [col 8, line 61-64], Lam specifically teaches for example storing data or file based on the predetermined storage hierarchy scheme, however, Lam does not teach 'access information for the file', although Lam suggests moving preselected files based in infrequently accessed files [see col 4, line 44-46]. On the other hand, Kamiyama teaches a system which including "access information for the file" [see Abstract, fig 2, col 5, line 21-31], also see fig 4 is related to data vs. access frequency, fig 11 is specifically directed to each data or file block associated with access frequency.

It would have been obvious one of the ordinary skill in the art at the time of applicant's invention to incorporate the teachings of Kamiyama into the automatically and transparently migrating data from a file server to an auxiliary storage medium or device of Lam because they are both directed to data storage capable of optimizing the data, more specifically data storage media utilized in a hierarchical structure [see Kamiyama, fig 2, col 1, line 65-67, col 2, line 1-2; Lam Abstract, col 4, line 40-42, especially fig 1, HSM system 2], and both from the same field of endeavor.

One of ordinary skill in the art at the time of the invention would have been motivated to modify the Lam's reference to incorporate the teachings of access information for the file, more specifically modifying Lam's fig 1 to incorporate the access management section, fig 3, element 14 of Kamiyama, because that would have allowed users of Lam's real time migration to control and optimize individual data blocks access frequency, bringing the advantages of optimizing the storage and management of the access frequency of data suggested by Kamiyama [see col 4, line 59-65], thus improving the performance and flexibility of data storage.

9. As to Claim 2, Kamiyama teaches a system which including 'data processor is a computer' [fig 27, col 15, line 23-25].

10. As to Claim 3, Lam teaches a system which including 'first storage medium' [col 4, line 17, fig 1, element 10], examiner interpreting first storage medium corresponds to Lam's primary storage device as detailed in fig 1, element 10 or file server, hard disk is integral part of a computer.

11. As to Claim 4, Lam teaches a system which including 'second storage medium is a removable medium' examiner interpreting second storage medium corresponds to Lam's second module or secondary storage device element 20 for example Optical storage device as detailed in fig 1.

12. As to Claims 5 and 14, Lam teaches a system which including ' data processor determines a priority of migration based on a predetermined standard for a plurality of files stored on the first storage medium and performs the migration' [col 5, line 11-26], on the other hand, Kamiyama teaches 'file with the highest priority' [fig 6, col 7, line 11-25], Kamiyama specifically teaches access management section containing low, intermediate, high, and ultra high frequency management section containing the file information as detailed in fig 6.

13. As to Claims 6, 15, and 17, Kamiyama teaches a system which including 'file stored on the first storage medium has an information region for storing file management information' [fig 7-8, col 7, line 60-67, col 8, line 1-5], 'data region for storing data' [col 8, line 2-3], 'information file is generated in the first storage medium' [col 7, line 60-65], Lam teaches 'all of the data of the data region is transferred to the second storage medium by migration' [col 6, line 13-24], especially, data blocks of the file which are to be migrated are transmitted to the secondary storage device, element 20 as detailed in col 6, line 21-23.

14. As to Claim 7, Kamiyama teaches a system which including 'information file contains the file management information' [fig 12, element 22a], 'access information to the file transferred to the secondary storage medium' [col 6, line 8-12], Lam teaches 'size information of the file on the first storage medium before the migration' [col 5, line 46-50, col 6, line 5-6, line 11-13].

15. As to Claim 8 and 16, Kamiyama teaches a system which including 'data region of the file on the first storage medium is opened up after the information file is generated' [col 5, line 21-27], Kamiyama teaches for example data items are stored in a hierarchical structure based on ultra high frequency access data, high frequency access data and like, more specifically, ultra high frequency access data is stored into the semiconductor memory, element 3, while high frequency access data is stored into the magnetic disk device, element 4 as detailed in col 5, line 21-25.

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16. As to Claim 9, Lam details a system which including 'file including the transferred file' [col 6, line 26-27], on the other hand Kamiyama teaches 'access information to the data is formed in the second storage medium' [col 5, line 24-35, fig 2].

17. As to Claims 10 and 12, Kamiyama teaches a system which including 'file opening means generates a file descriptor specifying a file transferred to the second storage medium based on the access information' [col 5, line 7-12, fig 4, fig 7], examiner interpreting file descriptor corresponds to Kamiyama's file ID as detailed in fig 7.

18. As to Claim 11, Kamiyama teaches a system which including 'reading means reads the content of the file opened by the opening means based on the file descriptor and stores it in a predetermined region of the memory of the data processor' [col 17, line 10-28].

Response to Arguments

Applicant's arguments filed on 4/10/2002 have been fully considered but they are not persuasive. For the Examiner's response to the Applicant's arguments, see the discussion given below:

19. In the remarks applicant argues Claim 1, a) In page 2, line 7-8, independent claim 1 has "....a reading means for reading the stored data.....; b) In page 2, line 13-15, Lam does not appear to disclose the tertiary storage device being a predetermined region on the memory of a data processor.

As to the arguments (a-b): Examiner disagree with the applicant because firstly Lam is directed to data migration in a computer system such as detailed in fig 1, more specifically teaches hierarchical storage management of data as detailed in col 1, line 45-47. Secondly, Lam discusses real time data migratory or RTDM with respect to migrating the data or file(s) to a secondary storage device as detailed in col 2, line 60-66. Thirdly, Lam teaches sparse files having a logical size having data blocks while physical size of the data blocks representing only the occupied data blocks as detailed in fig 4A-4B, further it is noted that specific command(s) to allocate data blocks which are written to, thus creating a sparse file having only five data blocks in 0,4,7,10 and n as detailed in fig 4A-4B, col 7, line 15-18, col 8, line 61-64 that corresponds to predetermined region of a storage hierarchy schema on the memory that has data blocks as detailed in fig 4A-4B

20. Argument c) In page 2, line 21-22, for reasons similar to those described above with regard to independent claim 1, independent claim 13 is also

As to the argument c) Examiner refers the arguments a-b of independent claim 1 as detailed above with regard to independent claim 13.

As to the arguments directed to the other dependent claims 2-12 and 14-17, they are not persuasive for much the same reason(s) based on independent claims 1 and 13 as discussed above.

21. In page 3, para 3, examiner noted applicant's remarks about prior art made of record, but not applied US Patents. Examiner responses are based on applicant's arguments and the prior art of record.

Conclusion

The prior art made of record

- a. US Patent No. 5564037
- b. US Patent No. 5893139

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure

- c. US Patent No. 5765204
- d. US Patent No. 6094723
- e. US Patent No. 6223247
- f. US Patent No. 6269420
- g. US Patent No. 5403639
- h. US Patent No. 6065065
- i. US Patent No. 5675781
- j. US Patent No. 5978815
- k. US Patent No. 5495607
- l. US Patent No. 5333311

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srirama Channavajjala whose telephone number is (703) 308-8538. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM Eastern Time. The TC2100's Customer Service number is (703) 306-5631.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene, can be reached on (703) 305-9790. The fax phone numbers for the organization where the application or proceeding is assigned are as follows:

703/746-7238	(After Final Communication)
703/746-7239	(Offical Communications)
703/746-7240	(For Status inquiries, draft communication)
(703) 308-6607	(Art Unit)

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-9600.


Srirama Channavajjala
Patent Examiner.
April 29, 2002.